

**FORCE XXI LOGISTICS: COMPANY-
GRADE MULTIFUNCTIONAL
LOGISTICIANS; SETTING THE
CONDITIONS FOR SUCCESS**

**A MONOGRAPH
BY
Major Kent S. Marquardt
Quartermaster**

**School of Advanced Military Studies
United States Army Command and General Staff
College
Fort Leavenworth, Kansas**

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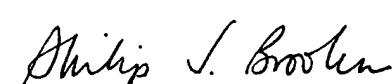
Approved by:


for Robert H. Berlin
LTC Victor L. Nelson, MA

Monograph Director


LTC Robin P. Swan, MMAS

Director, School of Advanced
Military Studies


Philip J. Brookes, Ph.D.

Director, Graduate Degree
Program

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ABSTRACT

Force XXI Logistics: Company-Grade, Multifunctional Logisticians; Setting The Conditions For Success by Major Kent S. Marquardt, USA, 40 Pages.

As the Chief of Staff of the Army approves the implementation of the redesign of the Army Of Excellence (AOE) into the Conventional Heavy Division Redesign (CHDR) or, better known as, the Force XXI (FXXI) Division, the ramifications to the tactical logistician are tremendous. The maneuver forces will be smaller, more maneuverable, and more dispersed. Information technologies will have to be leveraged by a more centralized logistical system that is based upon distribution or “just-in-time” logistics, not supply-based, just-in-case logistics. The fielding and effective utilization of these information systems will be critical to the success of the logistician.

The FXXI design with the implementation of a more centralized and distribution-based system, reorganizes the Forward Support Battalion (FSB). This reorganization takes the modularity of the FSB one step lower and creates Forward Support Companies (FSC) that support each maneuver battalion in the division. A bold step that will now combine organizational and direct support capabilities at the FSB level, across the logistical functions. This step will require trained multifunctional logisticians at the company-grade level.

Historically, the Army, as an institution, has not trained multifunctional logisticians until the senior captain or field grade level. Currently, the only training courses the Army offers for multifunctional logistical training is the Combined Logistics Officer Advanced Course (CLOAC). This multifunctional training is only provided for captains. Logistical enablers will be required to leverage the limited experience of these young officers. These facts offer serious dilemmas to the FSB commander who is required to ensure that the FSC commander is effective in his or her support to the maneuver battalion.

The monograph concludes that the FSB commander must be prudent when assigning officers to the FSC. The logistical characteristics of integration and anticipation will be needed to ensure that the maneuver battalion is logically supported. Additionally, intense training on the logistics characteristics, their modified definition under FXXI, and an intimate knowledge of and training on the FXXI technologies are important to the success of the FSC officer. Finally, several recommendations are offered to set the conditions for the success of the company-grade multifunctional logistician.

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CHAPTER I: INTRODUCTION

“That all warfare consists of an endless series of difficulties, things that go wrong, is a commonplace, and is precisely what Clausewitz meant when talking about the ‘friction’ of war. It is therefore surprising that the vast majority of books on military history manage to pay lip service to this concept and yet avoid making a serious study of it. Hundreds of books on strategy and tactics have been written for every one on logistics... [Logistical works have been composed] on the basis of a few preconceived ideas rather than on a careful examination of the evidence... [L]ogistics make up as much as nine tenths of the business of war...”

Martin Van Creveld
Supplying War; Logistics from
Wallenstein to Patton¹

On 9 June, 1998 the Army Chief of Staff approved the re-organization of the 4th Infantry Division from an Army of Excellence (AOE) division (sometimes known as division '86) to the Conventional Heavy Division Redesign (CHDR) or Force XXI (FXXI) Division. The FXXI Division implements significant change in several functional areas. One of the most significant changes has to do with the logistical functions. This change moves logistical functions from the maneuver battalion to the Forward Support Battalion (FSB), creates multifunctional Forward Support Companies (FSCs), and relies more on multifunctional capable logisticians at the company-grade level. The focus of change is on unburdening the maneuver battalion commander of logistical requirements by utilizing information age technologies and modular systems.^{2 3}

These changes have tremendous implications for the Force XXI FSB Commander. Historically, the U. S. Army logistical system has been supply-based and reactive. This has required the build up of huge ‘iron mountains’ in order to ensure that support was available for any circumstance. This system was characterized by echelons of support; organizational, direct support, general support, and depot.

The centralized combat service support (CSS) structure of the Force XXI division relies on distribution-based logistics and a blending of organizational and direct support. This structure will require that the logistician use information capabilities to anticipate the logistical demands and get supplies and support to the right place at the right time. Among the implications of the new structure are the requirement for training multifunctional logisticians at the company-grade level. Currently, multifunctional training for company-grade officers is not conducted until the Combined Logistics Officer Advanced Course (CLOAC) at the captain level. Since the new FXXI division relies on digitization and takes the logistical responsibilities away from the maneuver commander, and hands them over to company-grade multifunctional logisticians, what are the training implications for the FSB Commander and why is it important that he or she be successful?

This paper is organized around four of the six elements of the Army Digitization Master Plan (ADMP). The ADMP categorizes how to assess warfighting capabilities for forces equipped with digitization technology.⁴ The ADMP categories are doctrine, training, leader development, organization, materiel, and soldier systems (the acronym is DTLOMS). The categories of doctrine, organization, materiel, and training will be used as the outline of the paper because it lends itself to answering the questions:

- * What are the doctrinal implications? The doctrine portion will show digitization's application to existing logistical doctrine and the leverage that digitization will give the multifunctional logistician.
- * What is it? The organization section will show the composition and mission of the FSC as compared to support to the maneuver battalion in the AOE.

* What are the enablers that will make this successful? The materiel section shows what logistical systems might enable the company-grade multifunctional logistician to effectively support the maneuver commander.

* How do you train a multifunctional company-grade officer? Lastly, the training section will show how, in the past and recent present, the institutional Army has trained multifunctional logisticians. Also, it will show what digitization techniques are available. Lastly, this chapter will show how the FSB commander might be able to train a multifunctional company grade logistician given the new organization, logistical doctrine, and enablers of the digitized force.

* Why is it important? In the conclusion, the paper will show why it is so important that the logistical community embrace information age changes and set the conditions for the success of the company-grade multifunctional logistician.

CHAPTER II: DOCTRINE

“Doctrine: a set of rules or standard principles established for a certain group.”

New College Edition; The American Heritage Dictionary Of The English Language⁵

“Doctrine is the statement of how America’s Army...intends to conduct war and operations other than war.”... “Logistics is the process of planning and executing the sustainment of forces in support of military operations. It includes the design, development, acquisition, storage, movement, equipping, distribution, and evacuation functions of supply, field services, maintenance, health service support, personnel, and facilities. ...[I]t is an overarching function that occurs across the range of military operations.”

FM 100-5, Operations^{6 7}

Doctrine for U. S. Army logistics is found in chapter 12 of the Army’s keystone doctrinal manual, FM 100-5. In this instance it is useful to analyze the effects that the digitized force has on the Army’s logistical doctrine. Some of these key effects are entirely reliant on the capabilities of digitization. That is, logistical enablers that will facilitate information dominance. This is most important, because the desired doctrinal effects all hang upon the thread of information age technologies that will be available to the digitized force.

U. S Army doctrine has, in the recent past, been based upon the concept of mass logistics. Because of this, FM 100-5 lays out logistics across the spectrum of conflict; strategic, operational, and tactical. It provides a firm foundation upon which a logistician can plan logistical estimates and evaluate different courses of action during the Military Decision Making Process (MDMP). Having that firm foundation of logistical doctrine is a combat multiplier for the multifunctional logistician. It provides a systematic way to ensure that the requirements of the warfighter are matched with the capabilities of the

logistician and, as required, the logistician can identify and coordinate to fill any shortfalls in support. Arguably, the most important logistical doctrine revolves around the five logistics characteristics of anticipation, integration, continuity, responsiveness, and improvisation. When framed with the six tactical logistical functions of man, arm, fuel, fix, move, and sustain the logistician can ensure that none of the characteristics are violated when evaluating a course of action. Logisticians use the characteristics to evaluate whether a maneuver course of action is feasible, acceptable, and suitable, from a logistical standpoint.⁸

Section 1. Mass versus Just-In-Time Logistics

Before analyzing doctrine, it is important to understand the historic basis of U. S. Army logistics. This basis has been founded upon the industrial might of our country and has given the Army the capability to overwhelm the enemy with logistics. FXXI discards the concept of mass logistics and its' inefficient supply-based system. It embraces efficiencies that information can bring to a distribution-based logistical system. The key concept is knowing what the user has, what has been requisitioned, where it is, when it will get to the user, and the ability to anticipate and react to requirements.

Mass Logistics.

America has always waged war with mass logistics. Better known as the logistics of Iron Mountains, our industrial base has given the United States the logistics resources to wage and win wars of attrition against its enemies. Well-developed rail, river, road, and sea lines of communication have provided for the throughput of mass-produced weapons, equipment, and sustainment. Mass logistics is costly, takes time, and consumes huge amounts of resources.

Historically, the difficulties in transporting and provisioning large armies required the logistician to stockpile supplies at various points along the lines of communication leading to the army front. Trans-shipment nodes restrict this linear type of warfare, whether at Aerial/Sea/Rail Ports of Debarkation (A/S/RPODs), or supply points, all of the way to the user.

In the recent past, large armies relied almost totally on locally procured provisions and these provisions mostly went for food for the men and fodder for the horses. For example, during the Franco-Prussian War in the 1870's the Prussian Army's subsistence stocks were left to rot at the railheads because of the huge transportation requirements, disorganization of the railroad, and inadequate visibility over location of the supplies. This forced Moltke to spread his Armies over huge expanses in order for them to live off the land.

World War II was a prime example of mass logistics. Tremendous tons of supplies were brought over the shore at Normandy using probably the first example of Logistics Over The Shore (LOTS) and floating pre-manufactured ports. Supplies had to be sorted and handled many times due to the rudimentary ability to track their location. And, still, many logistical requirements were filled with local procurement.

Perhaps the most modern and striking example of mass logistics is Operation Desert Shield/Storm (ODS/S). This conflict saw how the responsiveness of the logistics system was degraded by thousands of duplicate orders placed because units had inadequate visibility over the status of their requisitions, particularly for critical items. Additionally, an enormous amount of materiel was shipped to the theater, but it was not readily available to our forces because of poor control and inadequate assets in-theater.

Such problems reduce the readiness of combat forces.⁹

Just-In-Time Logistics.

FXXI relies on the flow of information. In the logistical world it is the flow of information which locates an item at any certain point in time and provides the capability to manipulate that information which moves the item. Although the automated system that will enable the FXXI logistician to manipulate information will be discussed during the material chapter of the paper, it is important to the logistical doctrine of FXXI to explain the concept of just-in-time or distribution-based logistics.

There are no warehouses in the FXXI FSC. The premise is that the flow of information will be of such that the logistician will know exactly what the user has on-hand, where the supplies are in the pipeline, when they will arrive, and if he or she can re-direct them to a more needy consumer.

Asset visibility in the form of Total Asset Visibility and In-Transit Visibility (TAV/ITV) facilitate transition from a logistical system that is based around mass logistics and moves toward a system that focuses on just-in-time logistics (i.e., information on what assets are on-hand, where assets are, and when they will get here). Currently, there are two programs that attempt to bring TAV/ITV to the military; at the Army level, and at the Joint level.

Army Total Asset Visibility (ATAV) is a capability to help the Army manage its assets. ATAV is an automated capability designed to provide total visibility over Army assets and assist in decision-making for many Army logistics functions and actions. ATAV provides a single authoritative source of asset information in support of managers and decision-makers. ATAV is an assimilator of data. When a user submits a query to

ATAV it assimilates data from as many as 42 data sources and databases, as necessary to provide the user with a correct and complete response. ATAV uses data from existing sources of force structure, weapon systems, cataloging, and asset data. ATAV is currently available on-line from the Logistics Support Agency (LOGSA) and provides its users with the following categories of information:

- Assets are shown by on-hand quantity, due-in quantity, due-out quantity, substitute quantity, condition, ownership/purpose, and project.
- Force structure on-line query capability enhances visibility into the Army force composition down to company level.
- Authorizations required and authorized quantities for major items and requirement objectives at the retail level for repair parts.
- Requisition item information is an on-line database which catalogs information for the Army Master Data file (AMDF) and SB 700-20 and the Federal Logistics Information System (FLIS) database maintained by the Defense Logistics Services Center (DLSC).
 - Intransit items are displayed by document number, stock number, DoD Activity Address Code (DODAAC), voyage number, flight number, Transportation Control Number (TCN), and Radio Frequency (RF) Tag.
 - Weapon system items are shown first configured to the major item weapon system of which they are a part or which they support. They are identified as principal prime, prime, component major item, associated support item of equipment, or munitions. Relationships are then shown both bottoms-up and top-down. Top-down shows end items broken down to progressively lower major item subassemblies showing

their individual piece parts. Bottoms-up displays all end items that a piece or part is used on.

Joint Total Asset Visibility (JTAV) conceptualizes that a Joint Task Force (JTF) commander will have the ability to have a JTF logistical Automated Information System (AIS) to provide in-theater TAV capability. JTF commanders would use the logistics information in JTAV to enhance the planning for the deployment, reception, and onward movement of forces and materiel; the diversion of forces and materiel in-transit, if required, to meet changing contingency requirements; the management of in-transit assets to improve their utilization, cross-leveling, and distribution; and the redeployment of forces and retrograde of materiel.

JTAV, once realized, will provide theater CINCs, JTF commanders, and deploying forces with materiel and personnel asset visibility. JTAV will interface with military logistics databases to capture visibility of assets held by theater forces and with the theater transportation information system to provide visibility of shipments within a theater. JTAV will use the Defense Automatic Addressing System (DAAS) to exchange information with the Logistics Information Processing System (LIPS) and Inventory Control Point (ICP) AIS on assets in-bound to the theater and available in the Continental U. S. (CONUS). It will also obtain in-transit data directly from the Global Transportation Network (GTN). In addition to providing asset visibility, JTAV will provide essential logistics planning and analysis capabilities, to include:

- Supporting deliberate and crisis action planning
- Allocating critical assets
- Identifying and resolving in-theater logistics bottlenecks

- Monitoring the status and capability of strategic mobility assets
- Determining requirements for additional asset and lift capability
- Supporting theater doctrine, budget, and procurement decisions.¹⁰

Asset visibility is an essential element of the FXXI. TAV, while not solving the critical problems with a fragile transportation network, will give the tactical logistician visibility over stock status and available supplies and personnel.¹¹ Through TAV, the FXXI logistician will have visibility over assets from the foxhole to the depot.

Section 2. Logistics Characteristics (FM 100-5)

The AOE division is designed with the logistics characteristics as their doctrinal basis. Therefore, at this point it serves a useful purpose to define the five logistical characteristics identified in the current edition of FM 100-5 (1993):

- 1) Responsiveness is the ability to react rapidly enough that changes in the situation do not degrade the combat capabilities of the unit. Elements include: training, communications, automation, transportation, supply discipline, planning, and leadership. “Logistics commanders and staffs must adapt units to requirements, often on short notice. Tailoring organizations (is) the rule.”
- 2) Anticipation is the ability to predict far enough ahead of time possible requirements. This includes maintaining the necessary assets to support operations at the right times and places. Historically, this has been done through mass logistics. That is, turning on the pipeline so that mountains of supplies are shipped to the theater in order to anticipate any possibility.
- 3) Improvisation is the ability to respond to unforeseen circumstances on the battlefield and still provide effective support. A key aspect of this is the flexibility that

was provided by having mass logistical capabilities. FM 100-5 calls it "...the talent to make, invent, arrange or fabricate what is needed out of hand."

4) Integration is the blending of all logistical functions and operation characteristics in order to gain, across the Battlefield Operating Systems (BOS), a synergistic energy that will provide effective support to the force. Aggressiveness of the logistician in knowing what the operator is doing has always been a key element of this characteristic. Logistically, the key weakness of the AOE is the closed systems of information across the logistics and operations functions.

5) Continuity is the ability to maintain continuous support regardless of operational tempo (OPTEMPO). Elements include, mass logistics, personnel turbulence, transportation, and asset visibility. Historically, robustness of the logistical system (i.e., mass logistics) has maintained continuity.¹²

Section 3. Logistics Characteristics (FXXI)

A 1994 study by the Rand Corporation espoused the notion of Precision Guided Logistics (PGL), the authors identified the changes that digitization of the force would have on the five characteristics of logistics. These are summarized and commented on below:

1) Responsiveness would be defined using the FXXI concept of PGL which has a principle concept of the right stuff, at the right place, at the right time. The underpinning of this principle is information. That is knowing what the unit has; what, when, and where the unit will need it; where the resources are located; and when the resources can be applied to the need. The capability to cross level materiel in order to weight the effort will be key on the distribution and information based battlefield. Another aspect of

responsiveness in the FXXI is modularity. The FSC in the digitized force is designed to be completely modular. That means that it can pick up and move with its supported maneuver battalion and provide basic logistical support across the logistical functions.¹³

This is different from the definition of responsiveness in FM 100-5 where units are intended to be task organized to support different operations.

2) The anticipation characteristic is defined for FXXI as the capability to anticipate the needs of the force before the operations begin, or even as they are in motion, and plan logistics to support several different scenarios and respond to changes in the execution. This includes detailed planning for all feasible contingencies that may occur. One activity of anticipation for Force XXI logistics would be the building of strategic, operational, and tactical Combat Configured Loads (CCLs). These CCL's would have to be built in order to satisfy the logistical fog and friction of the battlefield. The old Murphy's Law would come into action here. That is, 'what can go wrong, will go wrong.' The multifunctional logistician supporting the maneuver battalion must be capable of anticipating any contingency and send the right CCL at the right time to the right place. This characteristic is probably the most important due to the extremely limited redundancy built into the FSC. Meaning, if it's not on hand, in the pipeline on the way, or has not been planned for with a CCL, then the killer will not get it when he needs it very badly.

3) Improvisation is defined for the digitized battlefield as the ability of the FXXI logistian to be flexible which will hinge on information in order to respond to the situation. As changes occur, the capability to configure support for the operation lies heavily on knowing what is on hand, what is coming, when it will get here, and how it

can best be applied to the situation. Above the other characteristics, this one is only gained through the experience of the mature multifunctional logistician. This characteristic can only be trained to a certain extent. It takes a logistician who is intimately familiar with Army systems to improvise on the battlefield. This is where the former combat arms logistician brings maneuver unit experience and empathy and combines it with an intimate knowledge of logistical structures, organizations, and functions. He uses this experience, empathy, and knowledge to leverage support to the warfighter. Many times this experience is what wins the logistical battle. Critical to the digitized force will be experienced multifunctional logisticians and former combat arms officers sharing their experience, empathy, and knowledge with company-grade multifunctional logisticians. Information technologies should provide the capabilities to do this.

4) In the future, information is the key to the integration characteristic. Still, the logistician will have to be aggressive because logistical information will continue to be compartmentalized. As will be explained in Chapter IV: Materiel, current automated logistical systems do not share information and are not integrated. The current logistical automated system is referred to as a closed system, which means each logistical automated system has to be accessed in order to get information. In fact, each logistical function has its own automated system and until the FXXI digitization is fully realized this will remain the case.

In FXXI, integration will remain a key tenet even when the digitized battlefield is fully implemented. Arguably, even more, after realization of battlefield awareness, integration will remain a key combat multiplier. Integration means knowing how the

other Battlefield Operating Systems (BOS) fit into the fight. Multifunctional logisticians, at all levels, have to ensure that these systems are supported in order to logically enable the maneuver battalion commander. The battlefield awareness systems of the digitized force will contribute immeasurably to this integration. So much so, that the logistician will have to ensure that he or she has a handle on current operations and future operations and their impacts on logistics. He or she must integrate the logistical plan with the maneuver battalion's in every situation.

5) In FXXI, the continuity characteristic will be defined as the system having the capability to continue to respond quickly despite the requirement. Logistically, this means visibility of assets from foxhole to strategic production, effective transportation, and the capability to cross level assets quickly to support the need. Since the digitized force has little or no redundancy, it is imperative that the information systems provide continuity in showing where the asset is located, when it will arrive, and current on-hand status at the user-level. Basically, the right stuff at the right place at the right time. And, the capability to redirect or reallocate assets. This is probably the weakest link in the logistical characteristics of the digitized force because it relies almost completely on information. Historically, a fragile link which was overcome by mass logistical capabilities.¹⁴

Section 4. Conclusion

A successful logistical plan must adhere to the fundamental principles of the logistics characteristics of US Army doctrine. Also, there must be changes in the definitions of the logistics characteristics and FXXI logisticians must use the changes to these principles to leverage the technology of the information age. The principles of the

doctrine are sound. However, they need to be redefined for the digitized force. Finally, logisticians must realize that only with the technological enablers in place will the changes to the definitions of the logistics characteristics be realized.

CHAPTER III: ORGANIZATION

“The total number of assigned soldiers dropped from slightly more than 17,000 in the old division to 11,486 in the new. The division possessed only a thin logistics base, but the Army downplayed this potential weakness with promises of ‘new logistical support systems and procedures’.”¹⁵

The Pentomic Era: The U. S. Army Between Korea and Vietnam

This section shows how the logistical support to the maneuver battalion in the AOE is different from the FXXI. The fundamental underpinning is centralized logistical management which is based upon distribution. The FXXI brings all of the logistical functions under the hat of a multifunctional logistician. In the AOE, the organizational support elements were controlled by the Headquarters and Headquarters Company (HHC) commander, a combat arms officer. Superficially, the FXXI design moves the mission of what was formerly the HHC of the maneuver battalion away from that battalion. It adds this mission to the newly created FSC along with the additional direct support (DS) mission that belonged to the AOE functional logistical companies of the FSB.

While FXXI leverages technological innovations to enable the logistician to anticipate requirements, it also distances the maneuver commander from being intimately concerned about his logistics support. Bottom line: the reorganization of the AOE into the FXXI combines responsibilities of the HHC and functional logistical companies into a single multifunctional FSC which supports the maneuver commander with less personnel than used to be in the HHC.

Section 1. AOE

Under current doctrine for the AOE division, the heavy FSB provides direct

support to the brigade and all units operating in the brigade area of operations. The FSB, operating out of the rear area of the brigade usually encompasses an area of responsibility about 30 kilometers behind the forward line of troops (FLOT). In current doctrine the FSB 'secures' the rear area. The FSB directs and coordinates support of the brigade and rear area security for the brigade from the Brigade Support Area (BSA). The maneuver battalions of the maneuver brigade use the trains concept to support their forces. Generally, the concept stipulates that combat trains are forward in the battalion area of responsibility and field trains are located in the BSA to deliver supplies forward to the field trains or directly to the units. In order to understand the differences between the FXXI FSB and the AOE FSB it is important to understand the different changes in structure and the impact on support capabilities. The AOE division is only logically multifunctional down to the battalion level. All units below the support battalion level are functional (see figure 1).

AOE Forward Support Battalion

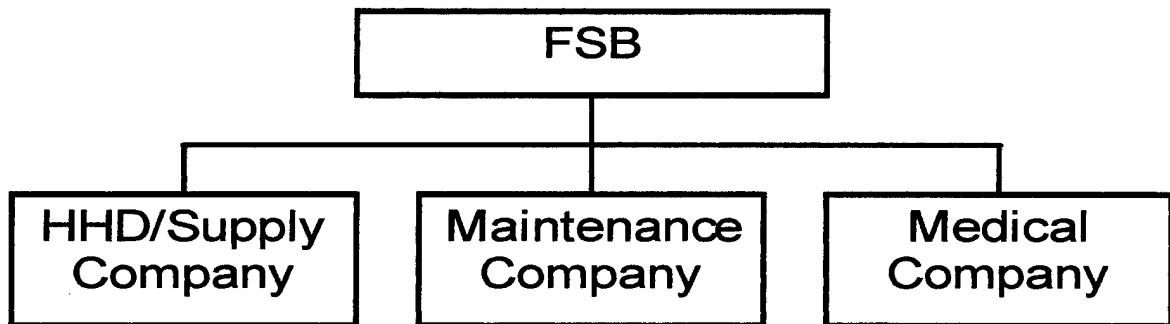


FIGURE 1

AOE support units are built around the just-in-case, or mass logistics, system.

Each company in the FSB operates a warehouse to receive, store, and issue supplies and equipment. The headquarters and supply company operates warehouses for general supplies and rations. The maintenance company operates a repair parts warehouse and the medical company operates a warehouse for medical supplies.

Section 2. FXXI

The AOE division has an overall strength of 18,069 soldiers with no reserve component (RC) soldiers. The FXXI division draws down to 15,719 active component (AC) soldiers and 417 RC soldiers. Although the FXXI division loses 2,767 soldiers in total, the conversion of the Division Support Command (DISCOM) from the AOE to the FXXI increases the personnel billets from 3,219 to 4,411 (which includes 115 RC soldiers). This is an increase of 1,192 personnel in the DISCOM's strength. This increase is due to the removal of organizational support personnel and capabilities from the maneuver brigades and battalions. These personnel are combined with the current FSB structure to establish FSC's which are responsible for organizational and direct support to the maneuver battalions. In essence, FXXI changes the FSB to a more multifunctional, and therefore modular support battalion with a variable number of FSC's, each one assigned depending upon the number of maneuver battalions supported. Since modularity is one of the tenets of FXXI, in the FSC that modularity has been taken to the maneuver battalion level. Additionally, the FXXI FSB (see figure 2) also has a Base Support Company and Forward Support Medical Company, to support the non-maneuver battalions and provide limited backup support to the FSC's. The FSC is equivalent in function to the current Forward Support Battalion, except for Combat Health Support (CHS). The CHS function remains in the HHC of the maneuver battalion

and in the FSB's functional medical company. Be that as it may, the FSC is a multifunctional logistical unit; where multifunctional is defined as having the capability to support more than one logistical function at the same time.

It is beneficial here to delineate the tactical logistical functions. Tactical logistical functions as specified in FM 100-5 (1993) are arm, fuel, fix, man, move, and sustain. Arm means to provide ammunition in sufficient quantities to the right place at the right time. The fuel function has to do with getting the right fuel to the right place at the right time. Fixing has to do with maintaining equipment at organizational and direct support levels, while providing recovery and evacuation support as far forward as possible. Manning has to do with personnel support to the battlefield. That is the right personnel, casualty replacement, and evacuation support at the right time and place. Moving, the fifth function is probably the most important of all. The logistician cannot be successful unless he or she can get it there. Lastly, is the sustain function which includes medical, financial, and field services. Although field services are probably of the least concern to the immediate warfight, they have a lasting effect on the morale of the soldier. Field services include support such as baking, showers, laundry, water making, aerial resupply, and mortuary affairs. Some of these functions have been combined into the FSC (see figure 3).¹⁶ However, most have been removed to echelons above division (EAD). This presents quite a challenge for the 171 soldiers who are assigned to the dynamic FSC and especially so for the multifunctional company commander.¹⁷

XXI
Forward Support Battalion

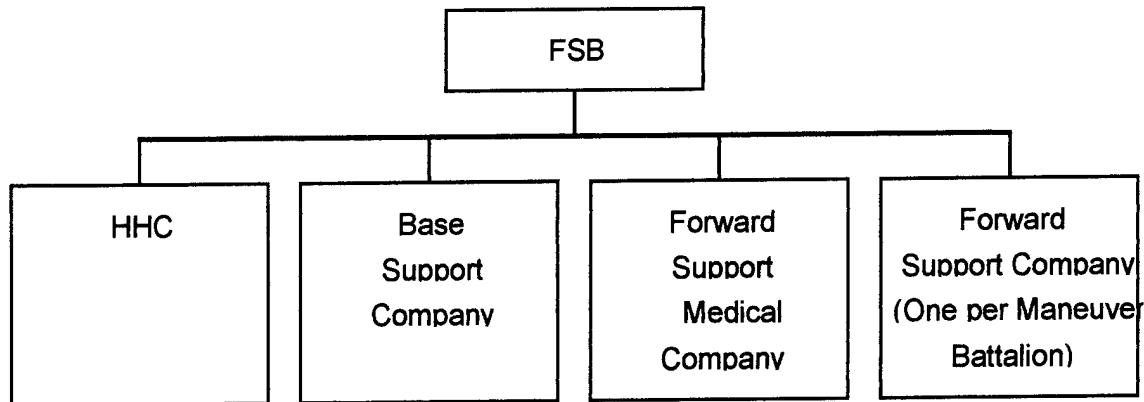


FIGURE 2

XXI
Forward Support
Company

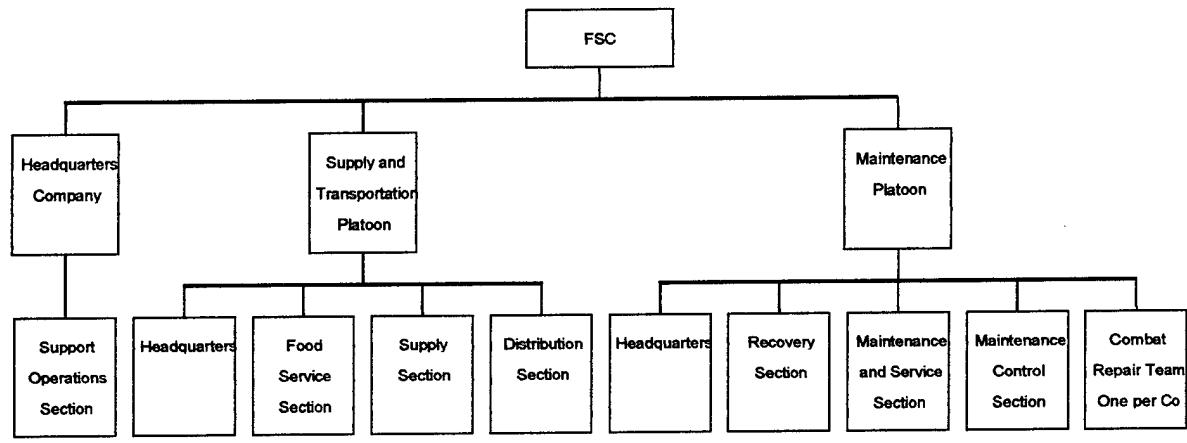


FIGURE 3

Since in the Division XXI, a FSC is responsible for the organizational and direct support for the maneuver battalion, two different Tables of Organization and Equipment (TOE's) provide for support to the combined arms team with armor or mechanized infantry battalion designs. The design of an FSC provides for a self-contained package of supply, transportation, and maintenance. The Main Support Battalion (MSB) and FSB

provide increasingly limited backup support to the maneuver battalion. In FXXI, EAD units provide the majority of backup support.

The FSC commander must have an intimate knowledge of organizational and DS-level maintenance and supply in order for the FXXI to work effectively. This is especially so because FXXI logistics will not allow units to stockpile large quantities of supplies or to circumvent the system. Mass logistics caused a hoarding mentality in the combat arms. Just-In-Time (JIT), or distribution-based, logistics will not allow this to continue. Asset visibility is a concept that will enable the FSC logistician to logically support FXXI.

Section 3. Conclusion

Special Operations Forces (SOF), the only other part of the army that has multifunctional FSC's, have recognized the challenge of multifunctional logistics. SOF FSC's are authorized 133 personnel and are commanded by majors with the FA 90, multifunctional logistician designation.¹⁸ Arguably, SOF has recognized that a multifunctional logistician must have plenty of experience. Also, SOF FSC's have less support capabilities and requirements than the heavy mechanized or armor FSC.

The significance of FXXI logistical support lies in the tremendous number of changes that happen in the logistical structure. First, the personnel assigned to the DISCOM increases by about 30 percent. Meanwhile, the DISCOM assumes the organizational support requirements for the maneuver battalion. In sum total, the logistical structure, also known as the tail, has shrunk in the maneuver battalion while the logistical responsibilities for the DISCOM have grown. Next, management of DS logistics, along with organizational support responsibilities, are now combined at the

FSC level. The significance of this lies in that the FSC commander now has the mission of providing a range of basic logistical support to the maneuver battalion; organizational and direct support. The maneuver battalion commander has to depend upon the expertise and effectiveness of the FSC commander. The FSC now has over 50 military occupational specialties (MOS) which are specialized across the logistical functions. Since each platoon has a different function, these different specialties further complicate the management of the company. To illustrate, the maintenance platoon alone has 19 different MOS which deal with the maintenance requirements of a mechanized, armor, or combined arms maneuver battalion. MOS's include; repair parts supply specialist, Bradley Fighting Vehicle (BFV) mechanic, track vehicle repairman, quartermaster and chemical equipment repairman, heavy wheeled vehicle mechanic, BFV automotive systems mechanic, wheeled vehicle repairman, communications security/radio equipment repairman, special electrical device repairer, welder, etc... These are only a few and show the complexities of the FSC. Finally, it is indisputable that the commander of the FSC is a company-grade multifunctional logistician. Bottom line is with the reorganization of the AOE into the FXXI there seems to be a negative sum personnel shell game. That is the size of the DISCOM grows but the responsibilities which are manifest in the FSC grow in a magnitude that is more than the gain in personnel. Further, the complexity and size of the FSC magnify the need to ensure that the company-grade logistician in the FSC is well trained and successful. Therefore, the FSB commander should consider placing senior captains into FSC command positions. Additionally, consideration should be given to changing future MTOEs to reflect FSC command authorizations as FA 90, multifunctional logistician, majors.

CHAPTER IV: MATERIEL

“Future sustainment operations will be enhanced by the integration of information technologies, flexible and agile combat service support organizations, and new doctrinal concepts to provide rapid and effective logistics to support across the full spectrum of operational environments.”¹⁹

“To plan, design, develop, acquire, install, and maintain highly complex management information systems to support the warfighter from the force projection base to the battlefield.”²⁰

United States Army 1998;

Weapon Systems

The path to Force XXI and the mission of STAMIS

All of the concepts in the FXXI division revolve around the increased battlefield awareness offered by information technology systems. Presently, the many different automated systems that the tactical logistician must know and be aware of offer quite a challenge. The maintenance company commander must know how to read the Standard Army Maintenance System (SAMS) printout in order to be able to manage the maintenance operations of the maneuver unit and his or her own internal equipment. The supply company commander must know how to ask the warehouse warrant officer pertinent questions about the Standard Army Retail Supply System-Objective (SARRS-O) system. The tremendous problem that exists with these Standard Army Management Information Systems (STAMIS) is that they are closed-loop systems. In other words, they do not share information with each other. This is key to the success of the company-grade multifunctional logistician. He or she will no longer be able to specialize in a functional logistical technicality. The intent of FXXI is to eliminate this and create a seamless logistical information system. Several systems attempt to do just this.

However, the system that will enable the multifunctional FSC Commander does not presently exist and any plan for a logistical automation enabler in the FSC is tenuous at best. Bottom line, the FXXI company grade multifunctional logistician will only be successful with prompt fielding, effective training on, and efficient utilization of a multifunctional logistical automation system. Only with the effective use of an automated enabler can he or she overcome their relative inexperience in multifunctional logistics.

Section 1. Current

Currently, there are fifteen different CSS STAMIS systems utilized, at the tactical level, in the Army inventory. Of these STAMIS, nine directly apply to support operations at the FSC level. They are:

- * Standard Installation/Division Personnel System (SIDPERS) - used to manage personnel and administrative information, down to separate company level.
- * Distance Learning (DL) - provides information age 'correspondence' courses for professional development.
- * Integrated Combat Service Support System (ICS3) - this system is intended to bring together the STAMIS at the user level. At this date, it is being realized by the Combat Service Support Command and Control System (CSSCS). It will be discussed below.
- * Standard Army Ammunition Management System (SAAS) - accounts for ammunition on the battlefield.
- * Standard Army Maintenance Management System (SAMS) - utilized at the direct support maintenance level to manage the maintenance work load. SAMS-1 is used

at the maintenance company and SAMS-2 is used as a management tool at the FSB level.

SAMS information is processed up to Department of the Army (DA) levels.

* Standard Army Retail Supply System-Objective (SARSS-O) - utilized at the direct support supply level and above to manage the requisitioning process and receipt, storage, and issue at the warehouse level.

* Unit Level Logistics System (ULLS) – there are several different types: ULLS-G manages maintenance and repair parts at the organizational level, ULLS-A does the same thing for aviation, ULLS-S4 accounts for organizational equipment and receipt, storage, and issue of general supplies at the organizational level.

* Standard Property Book System-Redesigned (SPBS-R) - this system manages the receipt, storage, and issue of major end items. Usually, found at the brigade level. However, every company commander needs to know the system in order to account for his or her equipment.

* Transportation Coordinator-Automated Information System II (TC-AIMS II) - key for power projection, this tool provides load and manifest information for the unit.

These myriad of legacy logistical systems alone are boggling. “Each branch, and branch subset, has independently developed ‘their’ system, because they felt their function to be unique.”²¹ This unfortunate situation puts the multifunctional logistician at a distinct disadvantage. That is, quite often he or she does not understand this system until he or she has experienced it in the field. Therefore, in the AOE, given these nine different systems and their nuances, it is necessary for the logistician to have a great deal of hands-on experience in order to have a working knowledge of what each system can contribute to the logistical plan and its execution.

Section 2. FXXI Systems

Introduction.

There are over 130 systems to be fielded in the digitized force.²² While these systems present a conundrum and even the Force XXI experts get them confused, the Combat Service Support Control System (CSSCS) is considered to be the key enabler for the multifunctional logistician. Currently, CSSCS will only be fielded at the FSB level. This presents a significant problem with leveraging logistical automation systems to help the company grade multifunctional logistician. The bottom line with logistical automation systems for the support of the maneuver battalion is that there is no new enabling technology in the FSC to leverage less personnel against a steady requirement.

CSSCS.

The CSSCS is the primary CSS component of the Army's digitization command and control structure. However, because it will not be a commodity manager, each of the STAMIS will still feed into CSSCS. That means that CSSCS is supposed to be the one system that brings the STAMIS together to share information.²³ This is kind of a precarious position because the STAMIS have always been fraught with the complication of the quality of the information input to the system determines the quality of the information generated by the system. CSSCS is meant to give the FSB Support Operations Officer (SPO) the means to manage all commodities within the brigade. This means that in order for the FSC to successfully support the maneuver battalion, the FSB SPO must have the ability to communicate and direct the support operations of the FSC.

FBCB2.

Force XXI Battle Command, Brigade and Below (FBCB2) is a digitized system

that provides on-the-move, real time, and near real time battle command information to tactical combat, combat support, and combat service support units. The fielding for FXXI has FBCB2 at the FSC level and below. Eventually, FBCB2 will be in each major fighting system and headquarters. Since FBCB2 does not provide higher echelon CSS battlefield awareness, the FSC multifunctional logistian still has to be familiar with SAMS-1 and SARSS. Plus he or she must have the capability to communicate with the FSB SPO in order to have TAV/ITV.

GCSS-Army.

Eventually, SAMS and SARSS will be replaced by the Global Combat Service Support System-Army (GCSS-A). "GCSS-Army, previously named ICS3, will be the principle and comprehensive...enabler for the Total Army for interfacing and integrating information and...systems across the CSS mission area."²⁴ The total fielding of this system is in three tiers that will not reach fruition in the field until 2005. CASCOM indicates that GCSS-A will be fielded down to the FSC level. Until that time, the FSC logistian will have to endure the current system.

Section 3. Conclusion

The rapidly evolving technology in the FXXI division makes it increasingly difficult to keep up with the latest evolution. Meanwhile, the basics of sound multifunctional logistics support do not change. That is, the five characteristics of logistics are still applicable to the FXXI and will remain so even with the fielding of CSSCS, FBCB2, and, arguably, even GCSS-A. Additionally, the characteristics that have made for successful multifunctional logisticians in the past will not change, but may be expanded to accommodate FXXI requirements, capabilities, and shortfalls. The enablers

will increase asset visibility and allow the multifunctional logistician to be more responsive and anticipatory as never before. The keys to this will be the timely and effective fielding of CSSCS, FBCB2, and GCSS-A. Additionally, the training on and utilization of these enablers will set the conditions for the success of the company-grade multifunctional logistician. An effective multifunctional logistician will have to leverage technology, yet still apply the logistics characteristics in order to be successful in the FXXI FSC.

CHAPTER V: TRAINING

“...[P]otential enemies must perceive that the Army has the capability to mobilize, deploy, fight, and sustain combat operations in unified actions with our sister services and allies. Training, therefore, is the process that melds human and material resources into these required capabilities.” “We train the way we intend to fight because our historical experiences amply show the *direct correlation* between realistic training and success on the battlefield.”

FM 25-100, Training The Force
Chapter 1: Training Challenges²⁵

Consider the following situation:

‘The newly branch-transferred officer has been in the SPO (support operations of the FSB) section for four months. Since that time, she has been deployed to NTC for a month, completed a division warfighter, and is now on an OPD terrain walk in a foreign country. Having started her career in a division with AOE legacy systems, she knows nothing about MCS (maneuver control system) or CSSCS. The battalion commander walks up to her and says “Jane, you are going to take over the B FSC in 30 days, start your change of command inventory when we get back to home station next week.” How can the FSB commander set the conditions for this Captain to be a successful multifunctional logistician?’

U. S. Army Training and Doctrine Command (TRADOC) defines training as “[t]he instruction of personnel to individually and collectively increase their capacity to perform specific military functions and tasks.”²⁶ In the Army there are three types of training; institutional, unit, and self-development.²⁷ Institutional training is conducted by the Army training base and is conducted by TRADOC organizations such as MOS-granting schools, training centers, and initial entry training. Unit training is subdivided

into individual, collective and self-development. Individual is defined as common soldier skills directly related to an MOS. Collective is defined as skills directly related to the unit's Mission Essential Task List (METL). Finally, self-development, which is also a type of training, is defined as individual skills designed to increase a soldier's knowledge or leadership base. This section of the paper will be organized around these categories in order to show how it is feasible to train a company-grade multifunctional logistician.

Company-grade multifunctional logisticians will have to be trained on using the digitized information systems. However, until the complete digitization of the force, FSC logisticians will have to rely on the legacy systems that exist today. That, and the fact that there will most likely be legacy systems in existence for several years, make training the FSC logistician a tremendous challenge.

Section 1. Background and Training of AOE Logistics Company Commanders

This section will show the traditional background and training of logistics company commanders in the maneuver battalions and FSBs of the AOE division. The background will include how HHC commanders and company commanders in the FSBs have been selected. Second, branch, experience, and training of these logisticians will be explained.

Commander, HHC of the maneuver battalion.

The Headquarters and Headquarters Company commander in the AOE is responsible for organizational supply, transportation, maintenance, and medical support to the maneuver battalion. In the armor battalion, this company is authorized 318 personnel, and includes platoons of support, maintenance, and medical.²⁸ The command

of this company is designated by TOE as a combat arms officer; depending upon the battalion, either armor or infantry. Usually, the maneuver battalion commander assigns the most capable captain in the battalion to this position because of the criticality of logistics. Experience has shown that maneuver battalion commanders try to assign senior captains or captains in their second command to this complex and challenging position. This is due to their experience and proven capabilities.

Although the position of HHC Commander is multifunctional at the organizational level, it does not deal with the complexities involved when organizational and direct support are combined; like in the FSC. Also, historically, there has been no formal training for the position of HHC Commander.

Commander, Functional Logistics Company of the FSB.

The commander of a functional logistics company in the AOE FSB commands a company that is either supply and transportation, maintenance, or medical. These companies provide direct support-level logistics to the maneuver battalions within the brigade. The command of these companies are designated by TOE according to their function. For example, the maintenance company is authorized 257 personnel and is commanded by an ordnance officer.²⁹

Usually, the FSB commander assigns an officer to command one of these companies after his or her assignment to the battalion and after a stint on the battalion staff. This officer comes from two types of background:

- A recent branch transfer from a combat arms branch.
- A CSS officer with a previous assignment as a functional logistician.

Both of these types of officers have limited background in multifunctional logistics.

They have previously been trained with limited experience in the field and attendance to an Officer Advanced Course (OAC).

The position of company commander in the current FSB is functional. An officer who has experience and has been trained in his or her function is usually assigned to command these companies. Historically, there has been no formal training, other than OAC, for the position of company commander within the FSB.

Section 2. Institutional Multifunctional Logistics Training Programs³⁰

Multifunctional logisticians have been required throughout history to support armies. Only since the advent of increased sophistication in supply from base, have logistics required specialists. World War II (WWII) brought this sophistication, or technical basis, into a profession. Since WWII, support technicians solved the requirements of a technological army by creating specialties based upon the logistical functions. Due to these specialties, there are great hurdles to be overcome in training capable multifunctional logisticians.

As an institution, the Army has only really 'trained' logisticians in the last 50 years. Although realized as a technical profession for many years, it seems that only in the wake of the highly successful mass logistics of World War II, has the field of logistics seemed to take on a science and art of its own. As a matter of fact, the documentation of training programs for such technicians before World War II is scant and hard to find. Therefore, analysis of historic multifunctional logistician training programs begins shortly after World War II.

Historically, the Army, as an institution, has not trained multifunctional logisticians until the senior captain or field grade level. Currently, the only training

course the Army offers for company-grade multifunctional logistical training is the Combined Logistics Officer Advanced Course (CLOAC). This multifunctional training is only provided for captains. There is no institutional training offered to lieutenants.

Past.

The Logistics Officer Program (LOP) (1956-1974), Logistics Management Officer (LMO) (1974-1983), and the Logistician Development Program (LDP) (1983-1992) were the U. S. Army programs to grow “Logistics Generalists.” These programs were open to officers of all branches except the Medical Service Corps (MSC), Judge Advocate General Corps (JAGC), and Chaplain Corps. The officer retained his basic branch and only majors and above were eligible. The officer was required to attend the Army Logistics Executive Development Course (LEDC) no later than his 21st year of service. The intent was for the officer to attend around 38 months of advanced schooling (to include formal logistical training) in between assignments to key logistical positions. Formally, officers were not considered fully trained as a multifunctional logistician until the rank of colonel. In practice, officers were positioned in multifunctional jobs starting at the rank of major. In these programs, it was specifically stated that multifunctional officers were expected to know logistics from the sustaining base to the foxhole. Changes to Army regulations and policies over the years, govern how the Army has historically developed and trained multifunctional logisticians.³¹ In an effort to develop a logistician who is proficient in all the logistical functions, these programs stressed formal education and practical experience from the tactical (retail) to the strategic (wholesale) levels.³²

Present.

The Logistian Program (LP) is the current system. As detailed in DA Pam 600-3, this system includes designation as a Functional Area (FA) 90, Logistian, while a captain. FA 90 is open to all basic branch officers. In the Combat Service Support (CSS) field, the FA 90 designation is limited to Transportation Corps (TC), Ordnance (OD), Quartermaster (QM), MSC, and Aviation Logistics (AVLOG) branches.

Training at the captain level is graduation from an Officer Advanced Course (OAC) or the Combined Logistics Captains Career Course (CLC3). CLC3, which replaces CLOAC, prepares officers to command at the company level and serve as a staff officer in a multifunctional support battalion. In the LP, only majors or senior captains are strongly encouraged to attend the multifunctional Support Operations Course (SOC). SOC is designed to train senior captains and senior NCOs as multifunctional logisticians. The instruction focuses on the technical and tactical aspects of planning and conducting logistics at the brigade and below levels.³³ Moreover, the FA 90 training at the captain level relies heavily on experience in multifunctional units. Bottom line, the SOC, as it is currently designed, is not intended to provide institutional training for company grade level multifunctional logisticians.

Future.

Institutionally, the Army does not provide training to become a multifunctional logistian. Therefore, a company grade multifunctional logistian, (i.e., an officer assigned to command the Forward Support Company (FSC)) by default, must rely almost totally on practical experience gained in the field. A junior or mid-grade captain has been in service for approximately 5 to 8 years. Quite possibly, those first 4 years (two short tours or one long tour) this officer was 'detailed' to Combat Arms (CA) or Combat

Support (CS). He or she has experience down at the foxhole level. Their experience enables them to have empathy for the other combat arms soldiers. Other officers were assigned to CSS units as platoon leaders. These officers learned logistics at the company functional level. Quite possibly, for example, having never seen a Direct Support Maintenance Unit (DSMU) in operation. In conclusion, captain's reporting to their first duty assignment after their OAC and signing in to a Forward Support Company (FSC), have very little institutional training and limited practical experience.

FXXI will provide logistical enablers to leverage the limited experience of these young officers. However, these facts offer serious dilemmas to the FSB commander who is required to ensure that the FSC commander is effective in his or her support to the maneuver battalion. Additionally, since the redesign takes organizational logistical responsibility away from the maneuver battalion commander, it is even more important that the FSB commander ensure the success of the FSC officer.

Section 3. Self-Development Training

This section shows what is currently available and what will be available in the future to train multifunctional logisticians. Many products are developed and offered by the Combined Arms Support Command (CASCOM). CASCOM provides a wealth of material that a multifunctional logistician can use to self-develop his or her skills and these materials are available on-line.³⁴ Although there are a limitless source of resources, the paper will focus on the technique of Distance Learning (DL). Then, cover Training Support Packages (TSP) and Tactics, Techniques, and Procedures (TTP) for the FSC. Lastly, the paper will suggest how changes to the Support Operations Course (SOC) could assist the training of the FSC commander.

Distance Learning (DL).

A key tenant of FXXI training is DL. Touted as the wave of the future, many organizations use this technique. Distance learning is the delivery of standardized individual, collective, and self development training to soldiers and units at the right place and time through the application of multiple means and technology. It supports leader training, education and development by allowing student/leader/unit-centered access to essential information and training. DL supports the acquisition, sustainment, and development of dimension-based knowledge and skills and has equal application across the three pillars of leader development.³⁵

In the Army, DL hinges on training programs available from the TRADOC schools. For the multifunctional logistician, CASCOM provides several training plans.

Training Support Packages (TSP).

The Armor Center at Fort Knox, KY is the proponent of TSPs for the FXXI. "A major task of the Force XXI Training Program is to develop a broad array of training support packages so the trainer has a selection of high quality training tools that support the units in the field. Training support packages are the heart of the Force XXI Training Program. A training support package will be a complete package that gives the training audience everything it needs to train."³⁶

CASCOM has developed five TSPs that are required for CSS soldiers. These TSPs are Force XXI, Split-Based Operations, Modularity, In Transit Visibility (ITV)/Total Asset Visibility (TAV), and Velocity Management (VM).³⁷ Basically, the TSP is a training tool available to the FSB commander to keep officers current on the FXXI CSS initiatives. Currently, these TSP are taught to CLOAC students. However,

the FSB commander could use them to supplement his or her quarterly Officer Professional Development (OPD) program or as a part of new officer inprocessing.

Tactics, Techniques, and Procedures.³⁸

The FXXI division uses special text that are available on-line to lay out the doctrine of the FSC. The keeper of this doctrine is CASCOM who maintains the web site. The doctrine offers the latest tactics, techniques, and procedures (TTP) to be used in the FSC. Every officer being assigned to a FSC should be required to read and demonstrate working knowledge of Special Text (ST) 63-10, Tactics, Techniques, and Procedures: Digitized Forward Support Company. This tool could also be used by the FSB commander as part of his or her professional development program.

Support Operations Course (SOC).

The SOC offers a practical method for training a multifunctional logistician. “The Support Operations Course prepares senior Captains and Majors for the specific job of providing direct support to a brigade combat team on the battlefield.”³⁹ Since the course recognizes the experience required to be a successful multifunctional logistician, it limits attendance to senior Captains and Majors.

The SOC has two phases. Phase I is a correspondence course which requires passing an open book test prior to being accepted into Phase II. Phase II is a two week course which includes 80 hours of training, on site, on each of the tactical functions, preparation of logistical synchronization matrices, a practical exercise, and a closed book examination. Since SOC is currently focused on logistical support to the brigade, as it is currently designed it would offer limited utility to the FSC commander.

As it stands now, SOC Phase I offers the most efficient opportunity to develop a

FSC multifunctional logistician. Phase I gives a junior captain the foundational tools to understand multifunctional basics. The FSB commander should require all officers in the battalion to enroll in and complete Phase I of the SOC.

Phase II should be modified to focus on multifunctional support to the maneuver battalion. Development of synchronization matrices and training on the tactical logistical functions has utility in training the FSC commander. The practical exercise should focus on training on CSSCS, FBCB2, SAMS, SARSS, and ULLS and how the FSC commander uses these tools to support the maneuver battalion.

Conclusion.

Self-development training offers some tools to the FSB commander to assist in his or her company-grade multifunctional logistician training program. Although not a substitute for hands on experience, these tools provide the logistician with fundamental knowledge and resources to assist him or her with multifunctional planning and execution.

Section 4. Unit Training

Unit training is where the FSB commander has the most influence on the training of the multifunctional company-grade officer. He or she will have to professionally develop him or her as a multifunctional logistician. FM 25-100 gives the commander responsibility for the individual, leader, and collective training of soldiers in his or her command.⁴⁰ This is especially true for the FSB Commander. A myriad of responsibilities challenge the FSC that are magnified by making company-grade multifunctional logisticians. Unit training can begin to give the FSC officer the hands-on, practical experience that will make him or her successful.

All company-grade logisticians should have to experience foxhole level logistical realities, for example, the chow that does not arrive on time, and the bullets that are the wrong caliber. That is, the fog and friction and Murphy's Law up on the front lines. This can only be done in concert with the maneuver commander. The FSC commander must be aggressive and always be in the maneuver commander's hip pocket. A well-planned, executed, and aggressive training program will ensure that the FSC commander gains experience at all levels.

A fundamental foundation of this training program should be that the FSC's training schedule is orchestrated with the maneuver battalion. The FSC commander attends all maneuver battalion training meetings and briefs his or her training plan at the battalion and brigade quarterly training brief (QTB). At the QTB he or she will brief:

- * Training planned the last quarter, training; with after action review (AAR) comments on the quality of the training. Also, brief any training that was planned but not conducted and why.
- * Training status of the FSC. This includes the current status of the company in, self-developmental, individual, and collective training.
- * Training planned for the next quarter. This should only include the categories of unit training and self-developmental training.
 - Unit training should mirror the maneuver battalion's training.

Whenever, a maneuver battalion element trains the FSC should be included and planned into the maneuver elements training. This training should be tactical.

- Self-developmental training should be the plan to train soldiers on FXXI tasks. Included in this would be many of the self-developmental training mentioned

previously.

The maneuver battalion commander must be empowered to buy into this system in order for it to work. Only then can the FSC commander begin to support him effectively. Close attention should be paid to adherence to this training schedule. Also, the maneuver battalion commander should have some kind of mechanism to get the attention of the FSC commander, when necessary. One mechanism could be to include the maneuver battalion commander as the intermediate rater on the FSC commander's officer evaluation report (OER).

This discussion does not let the FSB commander off the hook. He or she is vital to ensuring that the FSC commander is successful. As never before, it is the aggressive logistian who leverages the logistical characteristic of integration who will be successful. The FSB commander must be relentless in pursuing this integration. Since he or she is the senior logistian supporting the FXXI brigade, it is imperative that he or she establish some cardinal rules with the brigade commander:

- 1) Information age technology is the foundation of success, so all training is conducted using this technology.
- 2) FSC and FSB commander's QTB will be orchestrated concurrently with the maneuver units in the brigade. However, the DISCOM commander still is the final approving authority.
- 3) The FSB commander will be included in all QTBs and consulted as to the adequacy of the FSC commander's training plan.
- 4) FSC's will collocate with their maneuver battalion as much as possible; in garrison and in the field.

5) The maneuver battalion commander will have input into the selection of FSC commanders.

These cardinal rules are meant to closely align the FSC with the maneuver battalion.

They will put the FSB commander's unit training program on track with ensuring effective support to the maneuver unit.

In conclusion, institutionally the Army has historically relied on practical experience to train multifunctional logisticians. Currently, there are several resources that can be used to train the company-grade multifunctional logistician. While not providing hands-on experience, they will give the logistian a foundation of knowledge. Lastly, the FSB commander can set the conditions for the success of the FSC commander through his or her unit training program using the techniques mentioned above.

CHAPTER VI: CONCLUSION

“But while the importance of logistics is repeatedly asserted, little has been written to indicate the complexity of the administrative machinery needed to bring the required logistic support to bear at the proper place and time, or to show the difficulty of anticipating the requirements of distant battles... The aim throughout has been to relate the problems of logistic support to tactical plans and operations. ...[T]he focus [has been] on the influence which logistic support or lack of it had on the planning and conduct of combat operations by the field armies.”

Roland G. Ruppenthal
Logistical Support of the Armies, Vol I,
May 1941-September 1944⁴¹

FXXI offers challenging opportunities to the logistical community. Problems that have plagued modern armies from WWII to ODS/S will be solved. The logistician will finally have the tools that she or he has needed to operate like an efficient late 20th century business; near real time information and the ability to influence what that means. This paper has shown what those differences will mean to the logistical doctrine, organization, materiel, and training in the FXXI division. Also, it offers some recommendations to the FXXI logistical commander.

Recommendations.

Doctrine. Logistical doctrine in the AOE was based upon the concept of mass or supply-based logistics. In the FXXI, logistical doctrine will be based around Just-In-Time or distribution-based logistics. Asset visibility from foxhole to depot and the transportation support to get it there will enable the company-grade multifunctional logistician. The FXXI division is designed around this asset visibility and transportation capability. However, the basic characteristics of logistics do not change for FXXI. Based upon this, recommend that the logistical characteristics in FM 100-5 be re-defined

for the digitized force.

Organization. The logistics organization of FXXI centralizes logistics support to the maneuver battalion. The backup support, based upon the theory of distribution-based logistics, comes from outside the division. The AOE logistic support of the maneuver battalion consisted of the HHC for organizational level support and the functional companies of the FSB for direct support. In the FXXI, those same functions are now combined in the FSC with less, sum total, personnel. It will be important for the FSB commander to ensure the success of the FSC in order for the maneuver commander to be effective on the battlefield. Recommend that FSC commanders be selected carefully. Also, consideration should be given to changing future TOEs to authorize multifunctional majors as FSC commanders.

Materiel. Information technology will eventually enable the multifunctional company-grade logistician to be successful. It will be extremely important for him or her to learn this technology. Effectively drawing the STAMIS together and providing automated asset visibility from foxhole to depot will be the mission of GCSS-A. Recommend that GCSS-A be fielded in a timely and prudent manner. That the fielding plan includes an effective training package for FSC personnel. Until that fielding, recommend extensive hands-on training on FBCB2 for the FSC multifunctional logistician. Also, FXXI multifunctional logisticians need to have extensive training on the existing legacy systems, especially ULLS, SAMS, and SARSS. Finally, recommend FXXI logisticians continue to focus on learning and applying the basic characteristics of logistics.

Training. As an institution, the Army has not really trained multifunctional

logisticians, they were raised through experience gained in the field. Therefore, experience was the qualifying factor in being designated a multifunctional logistician. The availability of self-development training under FXXI, such as distance learning, can begin to change this. There are several tools that the FSB commander can use to train multifunctional logisticians; TTPs, TSPs, and the SOC. Ultimately, these tools can be rolled into the FSB commander's unit training plan. This would include a combination of self-development, individual, and collective training. Recommend that the FSB commander's unit training plan includes distance learning packages and a request to CASCOM for a SOC designed for FSC multifunctional logisticians. Additionally, recommend that the maneuver brigade and FSB commander agree on some cardinal rules to ensure the success of the FSC. Finally, the FSC's training plan should be entwined with the maneuver battalion. Essentially, the FSC becomes a part of the maneuver battalion.

Summary.

Why is it so important that the FSC commander be successful as a company-grade logistician? The implications of the FSC on the logistics structure are tremendous. Maneuver battalion commanders are now dependent upon the success of the FSC to carry the fight to the enemy and be successful on the FXXI battlefield. If his equipment is not mission capable, and he does not have the right logistical support when he needs it he will fail.

Some of the requirements for a successful FSC multifunctional logistician become more than obvious. The training implications are tremendous. However, the basics remain relevant and they are the five characteristics of logistics; anticipation,

integration, continuity, responsiveness, and improvisation. These basic characteristics are timeless and deserve a new definition for the FXXI logistician. Additionally, other logistical difficulties will remain unchanged. For example, FXXI still requires valid and accurate input from the customer unit. The FSC logistician will still need a complete knowledge of the automation and digitization of logistical systems in order to support the conduct of enabling anticipatory tactical logistics. Additionally, the successful FSC multifunctional logistician must have a background of experience at the lowest levels of the maneuver battalion. Only with the full fielding of the logistical enablers of FXXI will the company-grade multifunctional logistician be successful. Finally, the FSB commander can set the conditions for success by implementing an effective unit training plan.

END NOTES

¹ Creveld, Martin Van, Supplying War; Logistics from Wallenstein to Patton (Cambridge University Press, Cambridge, 1977), p. 231.

² "New Division Design Centralizes CSS," Army Logisitician, (September-October 1998), p. 1-2.

³ "Force XXI CSS Systems Organization", TRADOC Pam 525-5, "Force XXI Operations: A Concept for the Evolution of Full-Dimensional Operations for the Strategic Army of the Early Twenty-First Century", 1 August 1994, US Army Training and Doctrine Command, Fort Monroe, VA, p. 3-13 to 3-14. New CSS systems must weave a seamless continuum between the current levels of strategic, operational, and tactical logistics. In order to do this, FXXI logistics must be 'versatile, deployable, and expandable' to be able to respond to many varied levels of conflict. Logistics 'tailoring' will include modular units that can be plugged in to support a maneuver unit according to the requirements of METT-T.

⁴ "Army Digitization Master Plan '96",
<http://www.ado.army.mil/admp/1996/08asses.htm>.

⁵ New College Edition: The American Heritage Dictionary Of The English Language, edited by William Morris (Houghton Mifflin Company, Boston, MS, 1979), p. 387.

⁶ Field Manual 100-5, Operations (Headquarters, Department of the Army, Washington, D. C., 14 June 1993), p. 1-1.

⁷ *Ibid*, p. 12-1.

⁸ Field Manual 101-5, Staff Organization and Operations (Headquarters, Department of the Army, Washington, D. C., 31 May 1997), p. 5-11. Although FM 101-5 establishes the five criteria of suitability, feasibility, distinguishability, and completeness, the practical application of the first three is the accepted practice in the field.

⁹ Major Michael G. Dana, USMC, "The Legacy of Mass Logistics," Army Logisitician, March-April 1998, <http://www.almc.army.mil/ORGNZATN/ALOG/Mar-Apr98/MS266.htm>

¹⁰ "Joint Total Asset Visibility," JTAV Implementation Plan, JTAV Home Page, <http://204.255.70.40/TAVFA/jtav.html>.

¹¹ Total Asset Visibility (TAV)/In-Transit Visibility (ITV), Training Support Package, USACASCOM,
http://www.cascom.army.mil/multi/Training/CSS_Training_Support_Packages/Total_Asset_Visibility_In_Transit_Visibility/

¹² Field Manual 100-5, Operations (Headquarters, Department of the Army, Washington, D. C., 14 June 1993), p. 12-3 to 12-5. FM 100-5 (Draft, 1998) does not contain the functions and characteristics of logistics, or even a chapter entitled logistics. The functions and characteristics are relegated to FM 100-10, Combat Service Support.

¹³ Aldand, Arturo, LTC, "Force XXI: Forward Support Battalion Redesign," Quartermaster Bulletin, 2 Sep 98,
<http://132.159.126.30/quartermaster/bulletin/fsbxxi.html>. In practice, the 4th ID has removed the medical platoon from the FSC and kept it in the HHC of the maneuver battalion. Therefore, violating the modularity intent of the Army Digitization Master

Plan (ADMP).

¹⁴ Robbins, Marc L. and McIver, Douglas W., "Precision-Guided Logistics; Flexible Support for the Force-Projection Army's High-Technology Weapons," Arroyo Center, Rand Corp, Santa Monica, CA, 1994, p. 85-87. Although the Rand study makes no changes to the five characteristics, I would suggest that the digitized force would find it useful to add:

Simplicity => the less moving parts the better means that everyone understands the logistical concept in one rapid reading.

Synchronization => ability to coordinate and execute several different logistical actions at the same time in order to gain/build/maintain combat power.

**At first glance these characteristics may seem diametrically opposed. However, when considered together they create a logistical synergy on the battlefield.

¹⁵ A. J. Bacevich, "The Pentomic Era; The U. S. Army Between Korea and Vietnam," (National Defense University Press, Washington, D. C., 1986), p. 108.

¹⁶ "New Division Design Centralizes CSS," Army Logistician, (September-October 1998), p. 1-2.

¹⁷ Table of Organization and Equipment 63109F100, dated 17 July 98, Headquarters, Department of the Army, Washington, D.C., p. 5.

¹⁸ Ferris, Mark, A., MAJ, "Supporting Special Operations Forces," Army Logistician, Sept-Oct 98, pp. 24-26. SOF has also kept medical requirements out of the FSC. Also of note, SOF FSC's have an engineer platoon and separate supply and transportation platoons.

¹⁹ U. S. Army 1998, Weapon Systems, OASA (RDA), Integrated Communications and Planning Team, SAIC, Washington, DC, p. 3.

²⁰ Ibid, p. 65.

²¹ Lauer, Donald M., Colonel, "The Future of Logistics Automation," US Army War College, Carlisle Barracks, PA, 15 March 1992, p. ii. This paper details how over the last 30 years the Army has developed a confusing and sophisticated logistics system. The advent of automation has increased this complication several fold. However, the automation that has been developed has only managed to overlay itself onto what was formerly a stubby pencil drill. None of these automated systems talk to each other. That is, they do not share data or information and are therefore stovepipe. This has led to a belief in the Army that the logisticians quite often don't understand their system, do not have or take the time to learn it, and end up circumventing the system in order to make sure that the maneuver commander is supported. Meanwhile, the maneuver commander feels that the Army is developing logistical systems that are not in its best interests and definitely do not serve its needs. This aspect of circumventing the system in order to make sure the maneuver commander is supported is commonly known as brute force logistics; making it happen no matter what it does to the system. Brute force logistics is supply and redundancy based. FXXI will not be able to operate under this concept. The centralized logistical organization, distribution based system, and information technology reliance cannot tolerate the inefficiencies that are caused by brute force logistics.

²² U. S. Army 1998, Weapon Systems, OASA (RDA), Integrated Communications and Planning Team, SAIC, Washington, DC, p. iii-vii.

²³ CSSCS Overview Briefing,
http://www.lee.army.mil/CSSCS/updated_system_overview_briefing_1-16/sld016.htm
CSSCS is part of a plethora of acronyms belonging to Force XXI, which is confusing at best. Bottom line, in order for the FSC to operate effectively it will have to have a system that blends (integrates, to use one of the characteristics of logistics) CSS with tactical information. Asset visibility and being aggressive enough to anticipate requirements will still be key tenets in Force XXI.

²⁴ GCSS-Army, Frequently Asked Questions (FAQ), CASCOM Home Page,
<http://www.cascom.army.mil/GCSS-A/FAQ>

²⁵ Field Manual 25-100, Training The Force (Headquarters, Department of the Army, Washington, D. C., 15 November 1988), p. 1-1.

²⁶ Ibid, p. Glossary-7.

²⁷ TRADOC Pam 525-5, Force XXI, <http://www-tradoc.army.mil/tpubs/pams/5255fram.htm>

²⁸ Table of Organization and Equipment 87000A100 (SRC 17S75L100), dated 18 Aug 98, Headquarters, Department of the Army, Washington, D.C., p. 2.

²⁹ Table of Organization and Equipment 87000A100 (SRC 43009L000, 43510LA00, and 43510LB00), dated 18 Aug 98, Headquarters, Department of the Army, Washington, D.C., p. 6-7. 257 personnel is the minimum number authorized. This number can go up depending on the number of maintenance contact teams assigned to the unit.

³⁰ Bush, Charles D., LTC, OD, Logistics Generalists Development Program, US Army War College, Carlisle Barracks, PA, 23 March 1987.

Author details how, historically, multifunctional logisticians were selected, trained, assigned, and developed according to DA Pam 600-3.

³¹ Department of the Army Pamphlet 600-3, Commissioned Officer Development and Career Management (Headquarters, Department of the Army, Washington, D. C., 8 June 1995), p. 211-212, (30 September 1986), p. 94-95, (September 1977), p. 8-12 to 8-13, (March 1974), p. 24-1 to 24-4.

³² Bush, p. 27-29.

³³ Support Operations Course, <http://132.159.126.30/quartermaster/ltd/pdd.html#CLOAC>.

³⁴ Multifunctional Training, CASCOM Multifunctional Proponent,
<http://www.cascom.army.mil/multi/Training/>.

³⁵ Army Distance Learning Program, http://www-cgsc.army.mil/cal/ELDN/Project_Army_Distance_Learning_Plan.html

³⁶ Training Support Packages, US Army Armor Center, Force XXI Training Program, Directorate of Training and Doctrine Development,
<http://147.238.100.101/center/fxxitp/TSP.HTM>.

³⁷ Multifunctional Logistics: Frequently Asked Questions (FAQ) , CASCOM home page, <http://www.cascom.army.mil/multi/FAQ.htm#Are the TSPs mandated?>

³⁸ Tactics, Techniques, and Procedures: Digitized Forward Support Company, TTP 63-10 (Special Text 63-10), Multifunctional Logistics Training, CASCOM home page,
http://www.cascom.army.mil/multi/Training/Tactics_Techniques_Procedures/

³⁹ Army Logistics Management College, Tactical Training Department,
<http://www.almc.army.mil/>

⁴⁰ Field Manual 25-100, Training The Force (Headquarters, Department of the Army, Washington, D. C., 15 November 1988), p. 1-6.

⁴¹ Ruppenthal, Roland G., United States Army in World War II, The European Theater of Operations, Logistical Support of the Armies, in Two Volumes, Volume I: May 1941-September 1944, Center of Military History, United States Army, Washington, D.C., 1995, p. vii. A very informative, blow by blow, logistical account of the build up to the Invasion of Normandy and the storming of Europe during WWII.

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